



Agriculture, Food and Natural Resources Education: Meeting the Needs of the New Jersey Core Curriculum Content Standards

Produced by the
New Jersey Agricultural Education Association
May 20, 1996 * revised 9/20/96, 5/3/97 and 8/4/05
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These documents are works in progress. Comments from all interested parties are encouraged and welcomed.

INTRODUCTION

The mission of Agriculture, Food and Natural Resources Education is to prepare students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems. Agricultural Education provides students with a variety of opportunities to develop themselves personally and professionally. Traditionally, schools classify students based on “college bound” and “non-college bound.” For many, Agricultural Education is commonly assumed to be education for “non-college bound” students. However, Agricultural Education provides opportunities for all types of students to learn and excel.

In agricultural education classrooms, experience and values are vitally connected to the learning process. When education takes place, without a relating experience, the learning outcomes are unconnected and are soon forgotten. Since its origin, Agricultural Education has functioned under the concept that students learn best when instruction provides a connection to real world applications. Today's programs reflect the heritage of Agricultural Education. Classroom instruction, Supervised Agricultural Experience (structured learning experiences), and FFA (student leadership and career development organization integral to instruction) motivate students to succeed in school and ultimately in their careers.

Academic learning and character development are not mutually exclusive. Each step forward in intellectual growth must be accompanied by an equivalent degree of emotional development. Education must encourage positive actions and provide strategies for overcoming constraints. Education must encourage students to work constructively with others, to prevail against adversity and learn persistence in the face of difficulty. These lessons will stay with them through their adult lives. If we expect students to become enthusiastic learners, we must offer them opportunities to develop to their fullest potential.

The following is a compilation of Agricultural Education and FFA program activities that can help students meet the New Jersey Core Content Curriculum Standards. This list of activities reflects the diversity of learning experiences that Agricultural Education provides to help open the doors to premier leadership, personal growth and career success.

CONTENT STANDARDS:

1. VISUAL AND PERFORMING ARTS

Standard 1.1 (Aesthetics) All students will use aesthetic knowledge in the creation of and in response to dance, music, theater, and visual art.

Agricultural students use aesthetic knowledge in the creating of and in response to dance, music, theater, and visual art through:

- ?? Public speaking, demonstrations, public relations activities
- ?? Floral design, landscape design and maintenance
- ?? Sales, marketing, and advertising
- ?? Role modeling and role playing

Standard 1.2 (Creation and Performance) All students will utilize those skills, media, methods, and technologies appropriate to each art form in the creation, performance, and presentation of dance, music, theater, and visual art.

In agricultural education students utilize skills, media, methods and technologies appropriate to each art form in the creation, performance, and presentation of dance, music, theater, and visual art through:

- ?? The creation or performance of speeches
- ?? Public relations presentations and marketing and advertising displays
- ?? Floral and landscape designs
- ?? FFA Talent, Band, and Chorus
- ?? FFA Career Development Events (such as Agricultural Issues, Floriculture, Landscape Design and Floral Design)

Standard 1.3 (Elements and Principles) All students will demonstrate an understanding of the elements and principles of dance, music, theater, and visual art.

Students utilize the elements and principles of dance, music, theater, and visual art by creating:

- ?? Landscapes
- ?? Floral products and greenhouse crops
- ?? Designing newsletters
- ?? Using computer technology and utilizing video production for public relations, documentation, and personal expression.

Standard 1.4 (Critique) All students will develop, apply and reflect upon knowledge of the process of critique.

FFA members will develop, apply and reflect upon knowledge of the process of critique through the following activities:

- ?? Participation in Career Development Events, including, but not limited to, Public Speaking, Job Interview, Agricultural Sales, and Livestock Evaluation
- ?? Critique subject-related material by increasing knowledge, self-esteem, and confidence

Standard 1.5 (World Cultures, History, and Society) All students will understand and analyze the role, development, and continuing influence of the arts in relation to world cultures, history, and society.

In many areas of agriculture, understanding the origin of the topic is vital to comprehending contemporary arts as well as today's technology: for example:

- ?? Horticulture-history of floral design, landscape architecture, and nurseries

- ?? Parliamentary Procedure-history of, origins in Europe and Early America
- ?? Animal Science-husbandry vs. science

2. COMPREHENSIVE HEALTH AND PHYSICAL EDUCATION

Standard 2.1 (Wellness) All students will learn and apply health promotion concepts and skills to support a healthy, active lifestyle.

Promoting a safe and healthy life for the environment is essential; students learn and apply health promotion concepts and skills to support a healthy, active lifestyle through:

- ?? Agriscience classes: nutrition and disease prevention through proper diet
- ?? Animal Science: animal sanitation, disease prevention, and control
- ?? Horticulture: pesticide safety, plant sanitation, disease prevention, and control
- ?? FFA's personal growth seminars and conferences

Standard 2.2 (Integrated skills) All students will use health-enhanced personal, interpersonal, and life skills to support healthy, active lifestyle.

FFA leadership, personal growth and career development activities emphasize:

- ?? Professional appearance; good grooming
- ?? Personal etiquette
- ?? Developing goals
- ?? Human relation skills in the workplace
- ?? Supervised Agricultural Experience programs (structure learning experience)
- ?? Interpersonal skills such as telephone etiquette

Standard 2.3 (Drugs and Medicines) All students will learn and apply information about alcohol, tobacco, other drugs and medicines to make decisions that support a healthy, active lifestyle.

Agricultural Education students will learn and apply information to make decisions that support a healthy, active lifestyle by:

- ?? Food Science and nutrition emphasizes proper diet
- ?? The FFA Student Handbook addresses the physical, mental, emotional, and social effects of the use and abuse of alcohol, tobacco, and other drugs and discusses peer pressure

Standard 2.4 (Human Relationships and Sexuality) All students will learn the physical, emotional, and social aspects of human relationships and sexuality and apply these concepts to support a healthy, active lifestyle.

Through Agricultural Education, students learn and apply concepts to support a healthy, active lifestyle by:

- ?? Units in genetics and sexual reproduction address the topics of biological, social, cultural, and psychological aspects of human sexuality and family life
- ?? The FFA Organization emphasizes that students learn and practice responsibility

Standard 2.5 (Motor Skill Development) All students will utilize safe, efficient, and effective movement to develop and maintain a healthy, active lifestyles.

Utilizing safe, efficient, and effective movement to develop and maintain a healthy, active lifestyle is accomplished through:

- ?? Constructing and maintaining exterior and interior landscapes fosters participation in physical activities throughout life
- ?? Recreation activities at local, state and national FFA events

- ?? Active participation in Supervised Agricultural Experience Programs

Standard 2.6 (Fitness) All students will apply health-related and skill-related fitness concepts and skills to develop and maintain a healthy, active lifestyle.

Students enrolled in Agricultural Education will apply health-related and skill-related fitness concepts and skills to develop and maintain a healthy, active lifestyle through activities such as:

- ?? Food science - students learn the importance of proper nutrition in maintaining a healthy body
- ?? Exercise is encouraged through a variety of recreational activities sponsored by local, state and national FFA

3. LANGUAGE ARTS LITERACY

Standard 3.1 (Reading) All students will understand and apply the knowledge of sounds, letters, and words in written English to become independent and fluent readers, and will read a variety of materials and texts with fluency and comprehension.

Through Ag Education, students are able to become independent and fluent readers and can read a variety of materials and texts with fluency and comprehension:

- ?? Research materials
- ?? Periodicals
- ?? Online sources
- ?? Trade journals and magazines
- ?? Videotaped programs
- ?? Interactive classroom
- ?? Debates and discussions
- ?? Using the Internet

Standard 3.2 (Writing) All students will write in clear, concise, organized language that varies in content and form for different audiences and purposes.

Students develop skills in writing in clear, concise, organized language that varies in content and form for different audiences and purposes through:

- ?? Research of Agriculture, Food and Natural Resources careers
- ?? Development of Supervised Agricultural Experience record books
- ?? Applying for a job
- ?? Developing a marketing plans
- ?? Understanding net worth, cash flow, income statements and computerized record keeping
- ?? Preparing business goals
- ?? Completing various agribusiness forms
- ?? Writing a resume and letter of application
- ?? Agriculture Science Fair Projects
- ?? Agricultural Science Research Projects
- ?? Career Development Events – Agricultural Issues Forum, Prepared Public Speaking, Extemporaneous Speaking
- ?? Compose various text for different audiences such as:
 - o Essay, Reports, Research Papers
 - o Public Speaking (Prepared and Extemporaneous)
 - o Speaking arrangements (banquets and assemblies)
 - o Developing agendas for business meetings

Standard 3.3 (Speaking) All students will speak in clear, concise, organized language that varies in content and form for different audiences and purposes.

Through Ag Education, students learn to speak in clear, concise, organized language that varies in content and form for different audiences and purposes through:

- ?? Customer communication skills
- ?? Job interview skills
- ?? Project Partners in Active Learning Support (presentations to elementary school)
- ?? Mentoring skills
- ?? Identifying and practicing effective speaking, debating, and delivery techniques
- ?? Career Development Events – Parliamentary Procedure, Agricultural Sales, Prepared Public Speaking, Extemporaneous Public Speaking, Job Interview, Agricultural Issues Forum, Dairy and Livestock Judging
- ?? Selling agricultural products and services
- ?? Selling floral orders

Standard 3.4 (Listening) All students will listen actively to information from a variety of sources in a variety of situations.

Students develop listening skills through:

- ?? Laboratory safety exercises and following directions
- ?? Taking orders for agricultural products and preparing sales receipts
- ?? FFA State Officer visits, FFA recruitment and motivational videos, and site visits allow for non-traditional education opportunities
- ?? The FFA offers additional listening skill development through necessitating proper parliamentary procedure use, workshops, conferences, conventions as well as individual critiquing of presentations by peers
- ?? Career Development Events – Agricultural Issues Forum, Public Speaking
- ?? Active participation in Supervised Agricultural Experience Programs

Standard 3.5 (Viewing and Media Literacy) All students will access, view, evaluate, and respond to print, non-print, and electronic texts and resources.

Agricultural Education students develop skills for accessing, viewing, evaluating and responding to print, non-print, and electronic texts and resources through the following activities:

- ?? Identification and evaluation of plants and animals both live and through media (slides, videos, computer CD Rom, internet and online resources).
- ?? Viewing videos on parliamentary procedure and public speaking
- ?? Use of computer databases and internet tests
- ?? Career Development Activities: evaluations, peer and self performance
- ?? Career Development Events, such as: Livestock Judging, Poultry Judging, Dairy Foods, Fruit and Vegetables Identification, Land Judging, Agricultural Mechanics, Dairy Judging, Horse Judging

4. MATHEMATICS

Standard 4.1 (Number and Numerical Operations) All students will develop number sense and will perform standard numerical operations and estimates on all types of numbers in a variety of ways.

Students in Agriculture Education develop mathematical skills through activities such as:

- ?? Developing Business Plans and Projections
- ?? Topographical surveying
- ?? Calculating interest rates
- ?? Converting decimal to fractions
- ?? Metric system
- ?? Drawing to scale
- ?? Studies of comparing small growing areas to larger areas
- ?? Landscape estimation
- ?? Pricing estimation
- ?? Cost projections of greenhouse crop production

- ?? Materials needed to complete a task in landscaping and/or floral design
- ?? Project construction
- ?? Estimating labor requirements
- ?? Estimating costs
- ?? Career Development Events – Nursery/Landscape, Agribusiness Management, Floriculture, Turf Management, Agriculture Science Projects

Standard 4.2 (Geometry and Measurement) All students will develop spatial sense and the ability to use geometric properties, relationships, and measurement to model, describe and analyze phenomena.

Students in Agriculture Education develop the ability to use spatial sense and geometric properties, relationships, and measurement to model, describe and analyze phenomena:

- ?? Floral design
- ?? Landscape design
- ?? Developing and construction of shop projects
- ?? Agricultural structure planning and design
- ?? Land measurement
- ?? Measuring and calculating electricity
- ?? Shop projects
- ?? Surveying
- ?? Designing and developing recreational turf fields
- ?? Landscaping

Standard 4.3 (Patterns and Algebra) All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes.

Agricultural Education provides a practical relationship for the usage of mathematics through activities such as:

- ?? Genetics and genetic engineering
- ?? Applying pesticides
- ?? Determining greenhouse space for pot sizes
- ?? Calculating germination and rooting percentages
- ?? Using formulas in computer software/programs to keep records

Standard 4.4 (Data Analysis, Probability, and Discrete, Mathematics) All students will develop an understanding of the concepts and techniques of data analysis, probability, and discrete mathematics, and will use them to model situations, solve problems, and analyze and draw appropriate inferences from data.

Students in Agricultural Education will develop an understanding of the concepts and techniques of data analysis, probability, and discrete mathematic abilities through activities such as:

- ?? Genetics
- ?? Integrated pest management
- ?? Projections (business, crop, etc.)
- ?? Financial analysis
- ?? Supervised Agricultural Experience (structured learning experience)
- ?? Financial risk, human risk, institutional risk, business risk
- ?? Inventory products and supplies
- ?? Understanding depreciation, fixed and variable costs

Standard 4.5 (Mathematic Processes) All students will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas.

Students in Agriculture will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas to:

- ?? Measuring and calculating electricity
- ?? Examine the costs of borrowing money
- ?? Determine sources of credit
- ?? Understand depreciation, fixed and variable costs
- ?? Understand net worth, cash flow, income statements and computerized record keeping
- ?? Pricing floral design work
- ?? Pricing landscape design installations
- ?? Career Development Event, such as: Farm Business Management, Agricultural Sales, Agricultural Science Fair

5. SCIENCE

Standard 5.1 (Scientific Processes) All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.

Through Supervised Agricultural Experiences, Career Development Events, in-class experimentation, and Agriculture Science Projects the students develop problem solving, decision making, and inquiry skills by:

- ?? Problem solving, decision making, and inquiry skills
- ?? Crop growth and soil testing experiments allow students to plan, conduct, communicate, and interpret data
- ?? Conducting agricultural research
- ?? Wiring circuits
- ?? Food safety and sanitation
- ?? Identifying electrical tools and equipment
- ?? Using a microscope
- ?? Exploring food preservation
- ?? Determining future impacts and concerns brought about by agricultural biotechnology

Standard 5.2 (Science and Society) All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.

The study of Agricultural Education from its inception to the technological advances of today allows students to develop and understanding of how people further advanced the science and technology used today. Topics include

- ?? History of the FFA
- ?? History of Agriculture, Agricultural Education, and vocational/career education
- ?? International agricultural marketing
- ?? Emerging agricultural technologies
- ?? Advancements in agricultural science and technology

Standard 5.3 (Mathematical Applications) All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.

Students will integrate mathematics as a tool for problem-solving in sciences through Agricultural Education by:

- ?? Calculations for fertilizer dilution/concentration
- ?? Measuring trees and timber stands

- ?? Measuring soil needs
- ?? Practical application of agricultural business management and the use of computers
- ?? Research in agricultural science
- ?? Cost analysis for landscape projects and floral work may be utilized to show advanced skills

Standard 5.4 (Nature and Process of Technology) All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.

Students enrolled in agricultural education will understand the interrelationships between science and technology by:

- ?? Computers
- ?? Experimental testing of fertilizers and growth hormones
- ?? Determining the nature of biotechnology
- ?? Determining the role of science and technology in agricultural production and business
- ?? Determining the role of precision technologies
- ?? Recognizing the impact of technological advances in agricultural mechanics
- ?? Understanding hydroponics
- ?? Using automated systems in the greenhouse
- ?? Controlling the greenhouse climate
- ?? Using power tools and small landscape maintenance equipment
- ?? Understanding the role of fire in forest management
- ?? Installing and maintaining irrigation systems
- ?? Understanding integrated pest management.

Standard 5.5 (Characteristics of Life) All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

Gaining an understanding of the structure, characteristics and basic needs of organisms is achieved through:

- ?? Plant and animal anatomy and physiology
- ?? Systems of life cycles
- ?? Structure, characteristics and basic needs of organisms
- ?? Identification of plants and the use of binomial nomenclature
- ?? Breeding programs
- ?? Environmental factors
- ?? Biotechnology
- ?? Exploring cells
- ?? Exploring genetics
- ?? Examining mitosis and meiosis
- ?? Using crossbreeding and hybrids
- ?? Understanding animal life span
- ?? Understanding blood
- ?? Identifying the differences between plants and animals
- ?? Determining the importance of photosynthesis and respiration
- ?? Propagation plants sexually and asexually
- ?? Understanding the food chain and natural selection

Standard 5.6 (Chemistry) All students will gain an understanding of the structure and behavior of matter.

Students gain an understanding of the structure and behavior of matter by:

- ?? Nutrient and soil requirements of plants
- ?? Fertilizer usage rates
- ?? Pesticide applications
- ?? Conducting agricultural science research projects

- ?? Conducting soil, electrical conductivity, and water quality tests

Standard 5.7 (Physics) All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.

Students understand natural laws by:

- ?? Greenhouse system illustrates how heat is transferred by studying different light systems
- ?? Learn how the sun is the major source of the energy from the earth and how it is emitted in various forms
- ?? Above and below ground environmental factors
- ?? Describing basic physical science laws applied in agricultural mechanics
- ?? Exploring the science of electricity
- ?? Determining the role of electronics in agricultural technology

Standard 5.8 (Earth Science) All students will gain an understanding of the structure, dynamics, and geophysical systems of the earth. Agricultural Education students gain an understanding of the structure, dynamics and geophysical systems of the earth through:

- ?? Topography
- ?? Geology
- ?? Determining the nature of soil
- ?? Understanding soil texture and structure
- ?? Explaining a soil profile
- ?? Understanding moisture holding capacity
- ?? Understanding soil color
- ?? Determining the nature of soil
- ?? Understanding the water cycle and its importance to the environment
- ?? Understanding soil formation
- ?? Using Global Positioning Systems

Standard 5.9 (Astronomy and Space Science) All students will gain an understanding of the origin, evolution, and structure of the universe.

Students enrolled in Agricultural Education gain an understanding of the origin, evolution, and structure of the universe by relating seasonal changes and how species evolve.

- ?? Short day and long day crops
- ?? Summer and winter crops
- ?? Seed dormancy
- ?? Spore production

Standard 5.10 (Environmental Studies) All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.

An understanding of the environment as a system is achieved through Agricultural Education by enabling the student to examine how nature and population affect food supply, land management, and industry.

- ?? Crop loss
- ?? Climatic controls
- ?? Weather cycles
- ?? Building developments
- ?? Ozone depletion
- ?? Sewage treatment
- ?? Determining the kinds of and importance of natural resources
- ?? Understanding ecology and ecosystems

- ?? Determining sources of environmental pollution
- ?? Selecting methods of waste disposal
- ?? Determining how to prevent agricultural pollution
- ?? Conserving soil, water, wildlife, forests and energy
- ?? Understanding recycling and its relationship to the environment
- ?? Maintaining prairies, wetlands and wildlife habitat
- ?? Understanding environmental requirements for fish

6. SOCIAL STUDIES

Standard 6.1 (Social Studies Skills) All students will utilize historical thinking, problem solving, and research skills to maximize their understanding of civics, history, geography, and economics.

Agricultural Education students utilize historical thinking, problem solving and research skills by:

- ?? Meetings that utilize parliamentary procedure
- ?? Chapter structure--President, Vice President, etc.
- ?? Communication skills through public speaking/contests
- ?? Attendance at Advocacy and Legislative Day Leadership conferences
- ?? Attendance at the State FFA Convention

Standard 6.2 (Civics) All students will know, understand, and appreciate the values and principles of American democracy and the rights, responsibilities, and roles of a citizen in the nation and the world.

Students of Agricultural Education will know, understand and appreciate the values of democracy by:

- ?? Meetings that utilize parliamentary procedure
- ?? Chapter structure – President, Vice President, etc.
- ?? Communication skills through public speaking/contests
- ?? Attendance at Advocacy and Legislative Day leadership conferences
- ?? Attendance at the State FFA Convention
- ?? Cooperative learning
- ?? Personal interaction with faculty, staff and peers
- ?? School programs such as peer mediators, natural helpers, self esteem conferences
- ?? Ethnic and gender tolerance/awareness
- ?? Understanding federal and state income taxes, property tax, and sales tax
- ?? Understanding chemical laws and regulations
- ?? Understanding ownership rights and responsibilities
- ?? Understanding animal welfare issues
- ?? Exploring employment legislation
- ?? Understanding government regulation of agricultural products
- ?? Understanding the physical distribution of agricultural products
- ?? Exploring Agricultural Issues and participating in Agricultural Issues Career Development Event

Standard 6.3 (World History) All students will demonstrate knowledge of world history in order to understand life and events in the past and how they relate to the present and the future.

An understanding of world history will be achieved by Agricultural Education students through:

- ?? FFA (Local, State and National Activities)
- ?? County Board of Agriculture
- ?? Advisory Boards (Local and State)
- ?? History of the individual industry (Local, State and Global)
- ?? Museums, college and university field trips
- ?? Individual industry based association materials

Standard 6.4 (United States and New Jersey History) All students will demonstrate knowledge of United States and New Jersey history in order to understand life and events in the past and how they relate to the present and future.

Understanding of societal ideas and forces throughout the history of the United States and New Jersey is provided by the incorporation of events through:

- ?? Periodicals
- ?? Newspapers
- ?? Media: radio, TV, and movies
- ?? Understanding the natural park system

Standard 6.5 (Economics) All students will acquire an understanding of key economic principles.

Agricultural Education students will acquire an understanding of key economic principles by:

- ?? Environmental issues (global)
- ?? Determining trends in agriculture
- ?? Determining the role of consumers in world agriculture
- ?? Determining the role of international development in agriculture
- ?? Using sole proprietorships, partnerships, corporations and cooperatives
- ?? Understanding principles of business managements
- ?? Managing the greenhouse business, floral shop, nursery business, and landscape business
- ?? Understanding leases and leasing, options, hedging, cash and futures market
- ?? Exploring agribusiness liabilities
- ?? Identifying and using macroeconomics and microeconomics
- ?? Status of species (plant/animal) and how cultures affect these historical concerns.

Standard 6.6 (Geography) All students will apply knowledge of spatial relationships and other geographic skills to understand human behavior in relation to the physical and cultural environment.

Students enrolled in Agricultural Education will apply knowledge of spatial relationships and other geographic skills through the following:

- ?? Geographical understanding of product origin
- ?? Geographic species origins (plant/animal)
- ?? Geographic transport of products
- ?? Environmental science
- ?? Natural resources
- ?? Affects of global warming
- ?? Contribution/damage of ozone (depletion)

7. WORLD LANGUAGES

Standard 7.1 (Communication) All students will be able to communicate in at least one world language in addition to English. They will use language to engage in conversation, understand and interpret spoken and written language, present information, concepts, and ideas while making connections with other disciplines, and compare the language/culture studied with their own.

Agricultural Education students will communicate in at least one world language in addition to English through:

- ?? Latin – Binomial Nomenclature

Standard 7.2 (Culture) All students will demonstrate an understanding of the perspectives of a culture(s) through experiences with its products and practices.

Enrollment in Agricultural Education provides students with the opportunity to demonstrate an understanding of the perspectives of a culture by:

- ?? Introduction to Global Agriculture
- ?? International Leadership Seminar for State Officers

8. Technological Literacy

Standard 8.1 (Computer and Information Literacy) All students will use computer applications to gather and organize information and to solve problems.

Students enrolled in Agricultural Education will use computer applications to:

- ?? Complete Public Relations book
- ?? Complete Treasurer's Book
- ?? Create a Chapter Scrapbook
- ?? Complete Secretary's Book
- ?? Write research papers
- ?? Keep records on Supervised Agricultural Experience programs
- ?? Apply for scholarships, degrees, and awards
- ?? Practical Skills in Business Management Planning and Presentations

Standard 8.2 (Technology Education) All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual, society, and the environment.

Agricultural Education students will develop an understanding of the nature of technology by:

- ?? Controlling greenhouse climate
- ?? Maintaining agricultural equipment
- ?? Biotechnology
- ?? Understanding hydroponics
- ?? Understanding precision farming
- ?? Using Global Position System technology

9. Career Education and Consumer, Family and Life Skills

Standard 9.1 (Career and Technical Education) All students will develop career awareness and planning, employability skills, and foundational knowledge necessary for success in the workplace.

Students develop skills to become successful in the workplace through Agricultural Education by:

- ?? Conducting structure learning experiences (i.e. Supervised agricultural experiences – work-based experiences)
- ?? Identifying career choices
- ?? Developing a resume and portfolio
- ?? Demonstrating job seeking skills such as initial contacts and interviews
- ?? Taking orders
- ?? Answering telephones
- ?? Creating order forms and receipts
- ?? Taking the responsibility of a chapter/state office
- ?? Giving presentations

Standard 9.2 (Consumer, Family, and Life Skills) All students will demonstrate critical life skills in order to be functional members of society.

Students in Agricultural Education will become functional members of society through:

- ?? Demonstrating natural resource conservation
- ?? Using proper natural resource management techniques
- ?? Understanding the concept of a safe hunter
- ?? Examining boating and fishing safety
- ?? Using, storing, and disposing of pesticides safely
- ?? Demonstrating communication skills in all areas of Agricultural Education

CONCLUSION

Educational programs must provide rich and varied experiences of working with real scientists and artists, climbing real rocks, reading books that make one laugh and cry, writing, discussing, charting, reasoning mathematically, spending time alone, designing and carrying out lengthy experiments with peers, conducting business in school, going out of school to offer service to one's community, and coming back to create an artistic reflection or intellectual response to that experience. These moments can be exhilarating if they are accompanied by the significance of human accomplishment. When one not only discovers, but also takes pride in and can share these feats with others who care, learning becomes purposeful and life long. Roland Barth wrote, "If we want to improve schools, we must risk doing things differently next September than we did them last September. New, unusual ideas must be viewed not as a nuisance or embarrassment, but as a sign of life." We believe we have a powerful educational design however we do not have all the answers. We have gathered ideas, opinions, visions, and dreams from many schools. We, in essence, are on an expedition of our own. We are not sure how far our design will take us but based on research and experience we are confident we can propel our students' learning further and deeper than is currently happening.

We believe that educational programs must paradoxically combine towering standards for human performance with the assumption that every student can learn. We view children neither as receptacles to be filled or damaged goods to be patched. Instead, we are deeply respectful of the ideas children and adults generate and the strengths that they bring to every experience. We view children and teachers as scientists, inventors, writers, mathematicians, leaders, artists, linguists, historians, and deeply compassionate human beings who are in the process of becoming. We want them to become more thoughtful, more knowledgeable, more confident, and more courageous as they develop their minds, bodies, and character to their fullest potential.